CLAIMS:

1. A planet assembly for an epicyclic drive, said planet assembly having an axis and comprising:

a pin having first and second inner raceways located around and presented away from the axis;

a planet gear located around said pin and carrying first and second outer raceways, said first outer raceway being present toward said first inner raceway and said second outer raceway being presented toward said second inner raceway;

first rolling elements organized in a row between said first raceways;

second rolling elements organized in a row between said second raceways; and

wherein said pin and said planet gear are further configured to define a pair of lubricating gaps circumferentially disposed around opposite ends of said pin, each of said defined lubricating gaps exposing at least a portion of said first and second rolling elements to a lubricating fluid flow.

2. A planet assembly according to claim 1 wherein said first raceways are oblique to the axis and are inclined in a first common direction with respect to axis; and

wherein said second raceways are oblique to the axis and inclined in a second common direction with respect to the axis, said second common direction having an opposite inclination to said first common direction, whereby said first rolling elements are configured to transmit axial loads in one direction and said second rolling elements are configured to transmit axial loads in an opposite direction.

3. A planet assembly according to claim 2 wherein said first and second raceways are tapered and said first and second rolling elements are tapered rollers; and wherein said fist and second raceways taper downwardly toward each other.

4. A planet assembly according to claim 3 wherein said pin further has a thrust rib at a large end of said first inner raceway to prevent said first rollers from moving up said first raceways and a seat extended beyond said large end of the second inner raceway; and

a rib ring fitted over said seat to prevent said second rollers from moving up said second raceways, whereby the axial position of said rib ring on said seat is configured to control clearances or an absence of clearances between said tapered rollers and said raceways.

5. A planet assembly according to claim 1 wherein said pin is a unitary structure.

6. A planetary assembly according to claim 1 wherein said pin includes a core and a sleeve which is located around said core; and wherein said inner raceways are disposed on said sleeve.

7. A method of assembling the planetary assembly of claim 4, said method comprising:

placing said first tapered rollers along one of said first raceways;

fitting said pin and gear together such that said first rollers are between said first inner and outer raceways and along said thrust rib;

placing said second tapered rollers between said second raceways; and

advancing said rib ring over said seat until said bearing has a desired setting; and securing said rib ring to said pin.

8. The method according to claim 7 wherein the step of securing said rib ring includes welding said rib ring to said pin.

9. The method according to claim 7 wherein said step of placing said first tapered rollers along one of said first raceways includes placing said rollers along said first inner raceway.

10. An improved epicyclic drive including a sun gear, a ring gear, and a carrier having a pair of end members, the improvement comprising:

at least one pin having first and second ends anchored in the end members of the carrier;

a planet gear located around said pin and being engaged with the sun and ring gears;

an antifriction bearing located between said pin and planet gear, said antifriction bearing including

- first and second inner raceways carried by the pin,
- first and second outer raceways carried by the planet gear, said first and second outer raceways presented toward, and located opposite, said first and second inner raceways,
- first rolling elements arranged in a row between said first raceways, and
- second rolling elements arranged in a row between the second raceways; and

wherein the planet gear and said pin define a lubrication gap adjacent each of said first raceways and said second raceways, said lubrication gaps configured to permit a flow of lubricating fluid to said first and second rolling elements.

11. The combination according to claim 10 wherein the carrier further comprises separators extending between the end members to form at least one pocket in which the planet gear rotates.

12. The combination according to claim 10 wherein said first raceways are oblique to the axis and are inclined in a first common direction with respect to the axis; and wherein said second raceways are also oblique to the axis and inclined in a second common direction with respect to the axis, said second common direction being opposite the inclination of said first common direction, whereby said first rolling elements are configured to transmit axial loads in one direction and said second rolling elements are configured to transmit axial loads in the opposite direction.

13. The combination according to claim 12 wherein said first and second rolling elements are tapered rollers; and wherein said first and second raceways taper downwardly toward each other.

14. The combination according to claim 13 wherein said pin further includes a thrust rib at a large end of the first inner raceway to prevent said first rollers from moving up the first raceways and a seat extended beyond the large end of the second raceway; and

wherein said bearing further comprises a rib ring fitted over said seat to prevent said second rollers from moving up said second raceways, whereby the axial position of the rib ring on the seat controls the setting of the bearing.

15. A planet assembly for an epicyclic drive, said planet assembly comprising:

a pin provided with mounting ends and first and second tapered inner raceways located between said mounting ends, each of said raceways tapering in opposite directions downwardly toward each other, said pin further having a thrust rib projecting beyond a large end of said first inner raceway and a seat extending axially beyond said large end of said second inner raceway;

a planet gear located around said pin and having first and second tapered outer raceways presented toward and located opposite said first and second inner raceways, respectively, said gear being narrower then said pin is long, such that said mounting ends of said pin are located beyond the ends of the gear;

first tapered rollers located between said first inner and outer raceways and against said thrust rib, whereby said thrust rib prevents said first rollers from moving up said first raceways;

second tapered rollers located between said second tapered raceways;

a rib ring fitted over said seat on said pin and against said second tapered rollers to prevent said second rollers from moving up said second raceways; and

wherein said planet gear and said pin define a circumferential lubrication gap adjacent each of said first and second tapered raceways, said circumferential lubrication gap configured to permit a flow of lubricating fluid to said first and second tapered rollers.

16. A planet assembly according to claim 15 wherein said rib ring is welded to said pin.

17. A planet assembly according to claim 15 wherein said inner raceways are machined on said pin and said outer raceways are machined into said planet gear.

18. A planet assembly according to claim 15 wherein said pin comprises a core and a sleeve located around said core; wherein said inner raceways thrust rib and ring seat are on said sleeve; and wherein said core projects beyond said ends of said sleeve and forms said mounting ends of said pin.